



RECEIVED

NOV 25 2002

SEQUENCE LISTING

TECH CENTER 1600/2900

<110> KIM, Sun-Young
KIM, Kee-Won
KIM, Tae-Han
HWANG, Jeong-Ho
KIM, Seon-Hee
LEE, Sun-Young

<120> Heterologous Protein Production System using Avian Cells

<130> 003364.P001

<140> US 09/029,042
<141> 1998-05-15

<150> KR 10-1995-26391
<151> 1995-08-24

<150> PCT/KR96/00145
<151> 1996-08-23

<160> 15

<170> KopatentIn 1.71

<210> 1
H<211> 1585
<212> DNA
<213> Homo sapiens

<400> 1
atgggggtgc acgaatgtcc tgcctggctg tggcttctcc tgtccctgct gtcgctccct 60
ctgggcctcc cagtccctggg cgccccacca cgctcatct gtgacagccg agtcctggag 120
aggtagctct tggaggccaa ggaggccgag aatatcacgg tgagaccct tccccagcac 180
attccacaga actcacgctc agggcttcag ggaactcctc ccagatccag gaacctggca 240
cttgggtttgg ggtggagtgg ggaagctaga cactgcccc ctacataaga ataagtctgg 300
tggccccaaa ccatacctgg aaactaggca aggagcaaag ccagcagatc ctacggcctg 360
tggggccaggg ccagagcctt cagggaccct tgactcccc ggctgtgtgc atttcagacg 420
ggctgtgctg aacactgcag cttgaatgag aatatcactg tcccagacac caaagttaat 480
ttctatgcct ggaagaggat ggaggtgagt tccttttttt ttttttttcc tttcttttgg 540
agaatctcat ttgcgagcct gattttggat gaaagggaga atgacgggg gaaaggtaaa 600
atggagcagc agagatgagg ctgcctgggc gcagaggctc acgtctataa tcccaggctg 660
agatggccga gatgggagaa ttgcttgagc cctggagggt cagaccaacc taggcagcat 720
agtgagatcc cccatctcta caaacattta aaaaaattag tcaggtgaag tgggtgcatgg 780
tggtagtccc agatatttgg aaggctgagg cgggaggatc gcttgagccc aggaatttga 840
ggctgcagtg agctgtgatc acaccactgc actccagcct cagtgcaga gtgaggccct 900
gtctcaaaaa agaaaagaaa aaagaaaaat aatgagggtg gtatggaata cattcattat 960
tcattcactc actcactcac tcattcatte attcattcat tcaacaagtc ttattgcata 1020
ccttctgttt gctcagcttg gtgcttgggg ctgctgaggg gcaggagggg gaggggtgaca 1080
tgggtcagct gactcccaga gtccactccc tgtaggctcg gcagcaggcc gtagaagtct 1140
ggcagggcct ggccctgctg tcggaagctg tctgcgggg ccaggccctg ttggtcaact 1200

cttcccagcc	gtgggagccc	ctgcagctgc	atgtggataa	agccgtcagt	ggccttcgca	1260
gcctcaccac	tctgcttcgg	gctctgggag	cccaggtgag	taggagcgga	cacttctgct	1320
tgccctttct	gtaagaaggg	gagaagggtc	ttgctaagga	gtacaggaac	tgtccgtatt	1380
ccttcccttt	ctgtggcact	gcagcgacct	cctgttttct	ccttggcaga	aggaagccat	1440
ctccctcca	gatcgccct	cagctgctcc	actccgaaca	atcactgctg	acactttccg	1500
caaactcttc	cgagtctact	ccaatttcct	ccggggaaag	ctgaagctgt	acacagggga	1560
ggcctgcagg	acaggggaca	gatga				1585

<210> 2
 <211> 1583
 <212> DNA
 <213> Homo sapiens

41

<400>	2					
atgggggtgc	acgaatgtcc	tgcctggctg	tggcttctcc	tgtccctgct	gtcgtccct	60
ctgggcctcc	cagtcctggg	cgccccacca	cgctcatct	gtgacagccg	agtcctggag	120
aggtacctct	tggaggccaa	ggaggccgag	aatatcacgg	tgagaccct	tccccagcac	180
attccacaga	actcacgctc	agggcttcag	gcaactcctc	ccagatccag	gaacctggca	240
cttggttttg	ggtggagtgt	ggaagctaga	cactgcccc	ctacataaga	ataagtctgg	300
tggccccaaa	ccatacctgg	aaactaggca	aggagcaaag	ccagcagatc	ctacgcctgt	360
ggccagggcc	agagccttca	gggacccttg	actccccggg	ctgtgtgcat	ttcagacggg	420
ctgtgctgaa	cactgcagct	tgaatgagaa	tatcactgtc	ccagacacca	aagttaattt	480
ctatgcctgg	aagaggatgg	aggtgagttc	cttttttttt	ttttttcctt	tcttttggag	540
aatctcattt	gcgagcctga	ttttggatga	aaggggagaat	gatcgaggga	aaggtaaaat	600
ggagcagcag	agatgaggct	gcctggggcg	agaggctcac	gtctataatc	ccaggctgag	660
atggccgaga	tgggagaatt	gcttgagccc	tggaggttca	gaccaacctc	ggcagcatag	720
tgagatcccc	catctctaca	aacattttaa	aaaattagtc	aggtgaagtg	gtgcatgggtg	780
gtagtcccag	atatttggaa	ggctgaggcg	ggaggatcgc	ttgagcccag	gaatttgagg	840
ctgcagttag	ctgtgatcac	accactgcac	tccagcctca	gtgacagagt	gaggccctgt	900
ctcaaaaaag	aaaagaaaaa	agaaaaataa	tgagggtgtg	atggaatacg	ttcattatct	960
attcactcac	tactcactc	attcattcat	tcattcattc	aacatgtctt	attgcatacc	1020
ttctgtttgc	tcagcttggg	gcttggggct	gctgaggggc	aggagggaga	gggtgacatc	1080
cctcagctga	ctcccagagt	ccactccctg	taggtcgggc	agcaggccgt	agaagtctgg	1140
cagggcctgg	ccctgctgtc	ggaagctgtc	ctgcggggcc	agggcctgtt	ggtcaactct	1200
tcccagccgt	gggagccctt	gcagctgcat	gtggataaag	ccgtcagtgg	ccttcgcagc	1260
ctcaccactc	tgttcggggc	tctgggagcc	caggtgagta	ggagcggaca	cttctgcttg	1320
ccctttctgt	aagaagggga	gaagggtctt	gctaaggagt	acaggaactg	tccgtattcc	1380
ttccctttct	gtggcactgc	agcgacctcc	tgttttctcc	ttggcagaag	gaagccatct	1440
cccctccaga	tgcggcctca	gctgctccac	tccgaacaat	cactgctgac	actttccgca	1500
aactcttccg	agtctactcc	aatttcctcc	ggggaaagct	gaagctgtac	acaggggagg	1560
cctgcaggac	aggggacaga	tga				1583

<210> 3
 <211> 1585
 <212> DNA
 <213> Homo sapiens

<400>	3					
atgggggtgc	acgaatgtcc	tgcctggctg	tggcttctcc	tgtccctgct	gtcgtccct	60
ctgggcctcc	cagtcctggg	cgccccacca	cgctcatct	gtgacagccg	agtcctggag	120
aggtacctct	tggaggccaa	ggaggccgag	aatatcacgg	tgagaccct	tccccagcac	180
attccacaga	actcacgctc	agggcttcag	gcaactcctc	ccagatccag	gaacctggca	240

cttgggtttgg	ggtggagttg	ggaagctaga	cactgcccc	ctacataaga	ataagtctgg	300
tggccccaaa	ccatacctgg	aaactaggca	aggagcaaag	ccagcagatc	ctacggcctg	360
tggggccaggg	ccaaaacctt	cagggaccct	tgactccccg	ggctgtttgc	atttcagacg	420
ggctgtgtctg	aacactgcag	cttgaatgaa	aatatcactg	tcccagacac	caaagttaat	480
ttctatgcct	ggaagaggat	ggaggtgagt	tccttttttt	ttttttttcc	tttcttttgg	540
agaatctcat	ttgcgagcct	gatttttgat	gaaagggaga	atgatcgagg	gaaaggtaaa	600
atggagcagc	agagatgagg	ctgcctgggc	gcagaggctc	acgtctataa	tcccaggctg	660
agatggccga	aatgggagaa	ttgcttgagc	cctggagggt	cagaccaacc	taggcagcat	720
agtgagatcc	cccattctta	caaacattta	aaaaaattag	tcaggtgaag	tgggtgcatg	780
tggtagtccc	agatatttgg	atggctgagg	cgggaggatc	gcttgagccc	aggaatttga	840
ggctgcagtg	agctgtgatc	acaccactgc	actccagcct	cagtgcacaga	atgaggccct	900
gtctcaaaaa	agaaaagaaa	aaagaaaaat	aatgagggct	gtatggaata	cattcattat	960
tcattcactc	actcactcac	tcattccattc	attcattcat	tcaacaagtc	ttattgcata	1020
ccttctgttt	gctcagcttg	gtgctcgggg	ctgctgaggg	gcaggaggga	gagggtgaca	1080
tgggtcagct	gactcccaga	gtccactccc	tgtaggtcgg	gcaacaggcc	gtagaagtct	1140
ggcagggcct	ggccctgctg	tcggaagctg	tcctgcgggg	ccaggccctg	ttgggtcaact	1200
tttcccagcc	gtgggagccc	ctgcagctgc	atgtggataa	agccgtcagt	ggccttcgca	1260
gcctcaccac	tctgcttcgg	gctctggggg	cccagggtgag	taggagcgga	cacttctgct	1320
tgccctttct	gtaagaaggg	gagaagggtc	ttgctaagga	gtacaggaac	tgctcgtatt	1380
ccttcccttt	ctgtggcact	gcagcgacct	cctgttttct	ccttggcaga	aggaagccat	1440
ctccctccca	gatcgggcct	cagctgctcc	actccgaaca	atcactgctg	acactttccg	1500
caaactcttc	cgagtctact	ccaatttctt	ccggggaaag	ctgaagctgt	acacagggga	1560
ggcctgcagg	acaggggaca	gatga				1585

<210> 4
 <211> 1586
 <212> DNA
 <213> Homo sapiens

<400> 4

atgggggtgc	acgaatgtcc	tgccctggctg	tggtcttctcc	tgctccctgct	gtcgtccct	60
ctgggcctcc	cagtcctggg	cgccccacca	cgctctatct	gtgacagccg	agtcctggag	120
aggtagctct	tggaggccaa	ggaggccgag	aatatcacgg	tgagaccctt	tcccagcac	180
attccacaga	actcacgtc	agggcttcag	gcaactcctc	ccagatccag	gaacctggca	240
cttgggtttg	ggtggagttg	ggaagctaga	cactgcccc	ctacataaga	ataagtctgg	300
tggccccaaa	ccatacctgg	aaactaggca	aggagcaaag	ccagcagatc	ctacggcctg	360
tggggccaggg	ccaggagcct	tcagggaccc	ttgactcccc	gggctgtgtg	catttcagaa	420
gggctgtgct	gaacactgca	gcttgaatga	gaatatcact	gtcccagaca	ccaaagttaa	480
tttctatgcc	tggaagagga	tggaggtgag	ttcctttttt	tttttttttc	ctttcttttg	540
gagaatctca	tttgcgagcc	tgatttttga	tgaaagggag	agtgatcgag	ggaaaggtaa	600
aatggagcag	cagagatgag	gctgcctggg	cgcagaggct	cacgtctata	atcccaggct	660
gagatggccg	agatgggaga	attgcttgag	ccctggagggt	tcagaccaac	ctaggcagca	720
tagtgagatc	ccccattctt	acaaacattt	aaaaaaatta	gtcaggtgaa	gtgggtgcatg	780
gtggtagtcc	cagatatttg	gaaggctgag	gcgggaggat	cgcttgagcc	caggaatttg	840
aggctgcggt	gagctgtgat	cacaccactg	cactccagcc	tcagtgcacg	agtgaggccc	900
tgtctcaaaa	aagaaaagaa	aaaagaaaaa	taatgagggc	tgtatggaat	acattcatta	960
ttcattcact	cactcactca	ctcattcatt	cattcattca	ttcaacaagt	cttattgcat	1020
accttctgtt	tgtcagctt	ggtgcttggg	gctgctgagg	ggcaggaggg	tgagggtgac	1080
atgggtcagc	tgactcccag	agtccactcc	ctgttggtcg	ggcagcaggc	cgtagaagtc	1140
tggcagggcc	tggccctgct	gtcgggaagct	gtcctgcggg	gccaggccct	gttggtcaac	1200
tcttcccagc	cgtgggagcc	cctgcagctg	catgtggata	aagccgtcag	tggccttcgc	1260
agcctcacca	ctctgcttcg	ggctctggga	gcccagggtga	gtaggagcgg	acacttctgc	1320
ttgccctttc	tgtaagaagg	ggagaagggt	cttgctaagg	agtacaggaa	ctgtccgtat	1380

tccttccctt	tctgtggcac	tgcagcgacc	tcctgttttc	tccttggcag	aaggaagcca	1440
tctcccctcc	agatgcggcc	tcagctgctc	cactccgaac	aatcactgct	gacactttcc	1500
gcaaactctt	ccgagtctac	tccaattttc	tccggggaaa	gctgaagctg	tacacagggg	1560
aggcctgcag	gacaggggac	agatga				1586

<210> 5
 <211> 1583
 <212> DNA
 <213> Homo sapiens

41

<400>	5					
atgggggtgc	acgaatgtcc	tgccctggctg	tggtttctcc	tgccctgct	gtcgctccct	60
ctgggcctcc	cagtcctggg	cgccccacca	cgccctcatct	gtgacagacg	agtcctggag	120
aggtacctct	tggaggccaa	ggaggccgag	aatatcacgg	tgagaccctt	ccccagcac	180
attccacaga	actcacgctc	agggcttcag	gcaactcctc	ccagatccag	gaacctggca	240
cttggttttg	ggtggagttg	ggaagctaga	cactgcccc	ctacataaga	ataagtctgg	300
tgccccaaa	ccatacctgg	aaactaggca	aggagcaaag	ccagcagatc	ctacggcctg	360
tgggccaggg	gcagagcctt	cagggaccct	tgactccccg	ggctgtgtgc	atttcagacg	420
ggctgtgctg	aacactgcag	cttgaatgag	aatatcactg	tcccagacac	caaagttaat	480
ttctatgcct	ggaagaggat	ggagggtgag	tccttttttt	ttttttccct	tcctttggag	540
aatctcattt	gcgagcctga	ttttggatga	aaggggagaat	gatcgaggga	aaggtaaaat	600
ggagcagcag	agatgaggtc	gcctgggcgc	agaggctcac	gtctataatc	ccaggctgag	660
acggccgaga	tgggagaatt	gcttgagccc	tggagggttc	gaccaacctc	ggcagcatag	720
tgagatcccc	catctctaca	aacattttaa	aaaattagtc	aggtgaagtg	gtgcatgggt	780
gtagtcccag	atatttggaa	ggctgaggcg	ggaggatcgc	ttgagcccag	gaatttgggg	840
ctgcagttag	ctgtgatcac	accactgcaa	tccagcctca	gtgacagagt	gaggccctgt	900
ctcaaaaacg	aaaagaaaaa	agaaaaataa	tgagggtgtg	atggaataca	ttcattattc	960
attcactcac	tcactcactc	attcattcat	tcattcattc	aacaagtctt	attgcatacc	1020
ttctgtttgc	tcagcttggt	gcttgggcct	tctgaggggc	aggagggaga	gggtgacatg	1080
ggtcagctga	ctcccagagt	ccactccctg	taggtcgggc	agcaggccgt	agaagtctgg	1140
cagggcctgg	ccctgctgtc	ggaatctgtc	ctgcggggcc	agggccctgt	ggtcaactct	1200
tcccaaccgt	gggagccctt	gcagctgcat	gtggataaag	ccgtcagtgg	ccttcgcagc	1260
ctcaccactc	tgcttcgggc	tctgggagcc	cagttgagta	ggaggggaca	cttctgcttg	1320
ccctttgtgt	aagaaggaga	gaagggtctt	gctaaggagt	acaggaactg	tccgtattcc	1380
ttccctttct	gtggcactgc	agcgacctcc	tgttttctcc	ttggcagaag	gaagccatct	1440
ccctccaga	tgcggcctca	gctgctccac	tccgaacaat	cactgctgat	actttccgca	1500
aactcttccg	agtctactcc	aatttctctc	ggggaaagct	gaagctgtac	acaggggagg	1560
cctgcaggac	aggggacaga	tga				1583

<210> 6
 <211> 1587
 <212> DNA
 <213> Homo sapiens

<400>	6					
atgggggtgc	acgaatgtcc	tgccctggctg	tggtttctcc	tgccctgct	gtcgctccct	60
ctgggcctcc	cagtcctggg	cgccccacca	cgccctcatct	gtgacagccg	agtcctggag	120
aggtacctct	tggaggccaa	ggaggccgag	aatatcacgg	tgagaccctt	ccccagcac	180
attccacaga	actcacgctc	agggcttcag	gcgaactcct	cccaggatcc	aggaacctgg	240
cacttggttt	ggggtggagt	tggaagcta	gacactgccc	ccctacataa	gaataagtct	300
ggtggcccca	aaccatacct	ggaaactagg	caaggagcaa	agccagcaga	tcctacggcc	360
tgtgggccag	ggccagagcc	ttcagggacc	cttgactccc	cgggctgtgt	gcattccaga	420

cgggctgtgc	tgaacactgc	agcttgaatg	agaatatcac	tgtcccagac	accaaagtta	480
atttctatgc	ctggaagagg	atggaggtga	gttccttttt	tttttttttt	cctttctttt	540
ggagaatctc	atttgcgagc	ctgatttggg	atgaaagggg	gaatgatcga	gggaaaggta	600
aaatggagca	gcagagatga	ggctgcctgg	gcgcagaggc	tccagtctat	aatcccaggc	660
tgagatggcc	gagatgggag	aattgcttga	gccctggagg	ttcagaccaa	cctaggcagc	720
ctagtgagat	cccccatctc	tacaaacatt	taaaaaaatt	agtcaggtga	agtgggtgcat	780
ggtggtagtc	ccagatatatt	ggaaggctga	ggcgggagga	tcgcttgagc	ccaggaattt	840
gaggctgcag	tgagctgtga	tcacaccact	gcactccagc	ctcagtgaca	gagtgaggcc	900
ctgtctcaaa	aaagaaaaga	aaaaagaaaa	attatgaggg	ctgtatggaa	tacattcatt	960
attcattcac	tcactcactc	actcattcat	tcattcattc	attcaacaag	tcttatttga	1020
taccttctgt	ttgctcagct	tgggtgcttg	ggctgctgag	gggcaggagg	gagaggggtga	1080
catgggtcaa	ctgactccca	gagtcactc	cctgtaggtc	gggcagcagg	ccgtagaagt	1140
ctggcagggc	ctggccctgc	tgtcgggaag	tgtcctgcgg	ggccaggccc	tgttgggtcaa	1200
ctcttcccag	ccgtggggagc	ccctgcagct	gcatgtggat	aaagccgtca	gtggccttcg	1260
cagcctcacc	actctgcttc	gggctctggg	agcccagggtg	agtaggagcg	gacacttctg	1320
cttgcccttt	ctgtaagaag	gggagaaggg	tcttgctaag	gagtacagga	tctgtccgta	1380
ttccttccct	ttctgtggca	ctgcagcgac	cacctgtttt	ctccttggca	gaaggaagcc	1440
atctcccttc	cagatgcggc	ctcagctgct	ccactccgaa	caatcactgc	tgacactttc	1500
cgcaaactct	tccgagtcta	ctccaatttc	ctccggggag	agctgaagct	gtacacaggg	1560
gaggcctgca	ggacagggga	cggatga				1587

<210> 7
 <211> 193
 <212> PRT
 <213> Homo sapiens

<400> 7

H) Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Leu Ser Leu
 1 5 10 15
 Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
 20 25 30
 Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
 35 40 45
 Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
 50 55 60
 Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
 65 70 75 80
 Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
 85 90 95
 Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
 100 105 110
 Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
 115 120 125
 Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
 130 135 140
 Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
 145 150 155 160
 Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Val Ser Asn Phe Leu
 165 170 175
 Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
 180 185 190
 Arg

<210> 8
 <211> 193
 <212> PRT
 <213> Homo sapiens

<400> 8
 Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Leu Ser Leu
 1 5 10 15
 Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
 20 25 30
 Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
 35 40 45
 Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
 50 55 60
 Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
 65 70 75 80
 Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
 85 90 95
 Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
 100 105 110
 Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
 115 120 125
 Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
 130 135 140
 Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
 145 150 155 160
 Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Val Ser Asn Phe Leu
 165 170 175
 Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
 180 185 190
 Arg

<210> 9
 <211> 193
 <212> PRT
 <213> Homo sapiens

<400> 9
 Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Leu Ser Leu
 1 5 10 15
 Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
 20 25 30
 Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
 35 40 45
 Ala Glu Asn Ile Thr Lys Gly Cys Ala Glu His Cys Ser Leu Asn Glu
 50 55 60
 Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
 65 70 75 80
 Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
 85 90 95
 Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
 100 105 110

Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
 115 120 125
 Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
 130 135 140
 Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
 145 150 155 160
 Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu
 165 170 175
 Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
 180 185 190
 Arg

<210> 10
 <211> 193
 <212> PRT
 <213> Homo sapiens

<400> 10
 Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Leu Ser Leu
 1 5 10 15
 Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
 20 25 30
 Ile Cys Asp Arg Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
 35 40 45
 Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
 50 55 60
 Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
 65 70 75 80
 Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
 85 90 95
 Leu Ser Glu Ser Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
 100 105 110
 Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
 115 120 125
 Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
 130 135 140
 Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
 145 150 155 160
 Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu
 165 170 175
 Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
 180 185 190
 Arg

<210> 11
 <211> 193
 <212> PRT
 <213> Homo sapiens

<400> 11
 Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Leu Ser Leu
 1 5 10 15

Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
 20 25 30
 Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
 35 40 45
 Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
 50 55 60
 Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
 65 70 75 80
 Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
 85 90 95
 Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
 100 105 110
 Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
 115 120 125
 Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
 130 135 140
 Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
 145 150 155 160
 Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu
 165 170 175
 Arg Gly Glu Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
 180 185 190
 Gly

<210> 12
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer specific to EPO gene

<400> 12
 gaagctgata agctgataac c

21

<210> 13
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer specific to EPO gene

<400> 13
 tgtgacatcc ttagatctca

20

<210> 14
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>

<223> primer specific to EPO gene

<400> 14

caagcttcgg agatggggtg cacgaatgtc ctgcctggct gtggc

45

<210> 15

<211> 27

<212> DNA

<213> Artificial Sequence

A1
<220>

<223> primer specific to EPO gene

<400> 15

caagctttca tctgtcccct gtcctgc

27